

In re Appln. of Nie et al.
Application No. 09/405,653

C₁
D 1. (Twice Amended) A water-soluble luminescent semiconductor quantum dot, which comprises a core, a cap and a hydrophilic attachment group, wherein said hydrophilic attachment group is an organic group comprising a sulfur atom and at least one hydrophilic substituent selected from the group consisting of a sulfonic acid or salt thereof, a sulfamic acid or salt thereof, ~~an amino substituent~~, a quaternary ammonium salt, and a hydroxy, wherein the water-soluble luminescent semiconductor quantum dot remains in solution for at least one day.

C₂ 2. (Amended) The water-soluble luminescent semiconductor quantum dot of claim 1, wherein the hydrophilic attachment group is attached to said quantum dot via the sulfur atom.

C₃ 3. (Amended) The water-soluble luminescent semiconductor quantum dot of claim 1, wherein said organic group is a C₁-C₆ alkyl group or an aryl group.

4. (Amended) The water-soluble luminescent semiconductor quantum dot of claim 1, wherein said organic group is a C₁-C₆ alkyl group.

5. (Amended) The water-soluble luminescent semiconductor quantum dot of claim 1, wherein said hydrophilic attachment group is a thiol alcohol.

REMARKS

The Present Invention

The present invention is directed to a water-soluble luminescent semiconductor quantum dot comprising a core, a cap and a hydrophilic attachment group, wherein the water-soluble luminescent semiconductor quantum dot remains in solution for at least about one day. The present invention further provides a composition comprising the water-soluble luminescent semiconductor quantum dot.